

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

PINPOINT INCORPORATED,

Plaintiff,

V.

HOTWIRE, INC.,

Defendant.

Civil Action No. 1:11-cv-05597

Honorable John F. Grady

Mag. Judge Denlow

HOTWIRE, INC.'S OPENING BRIEF REGARDING INDEFINITENESS AND MATHEMATICAL CONSTRUCT CLAIM LIMITATIONS

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INTRODUCTION

This patent infringement matter stems from Plaintiff Pinpoint Incorporated's assertions that Defendant Hotwire, Inc. infringes three patents in the field of recommendation systems, *i.e.*, suggesting goods or services based on customer preference. The patents-in-suit, however, are limited to a specific set of now-outdated algorithms for characterizing and matching objects with customers. Pinpoint seeks to avoid the limits of the patents by reading the claims so broadly as to encompass virtually the *entire field* of recommendations systems. Pinpoint's gambit has been rejected once before. *See Pinpoint Inc. v. Amazon.com*, 369 F. Supp. 2d 995 (N.D. Ill. 2005) (J. Posner). Pinpoint's motivation for trying again is obvious: if successful, no company would be outside its grasp. If Pinpoint gets its way, it could claim credit for systems that provide recommendations for news articles, sports updates, movie or television programming, commercial goods or even dating options, irrespective of the complexity or nature of the specific algorithms used to provide the recommendations. Pinpoint's second bite at the apple suffers from at least two fatal failings.

First, the asserted claims are indefinite because they are wholly subjective and provide no objective basis for one of skill in the art to determine the scope of the claimed monopoly. The claims of two asserted patents, U.S. Patent Nos. 7,853,600 ("the '600 patent") and 8,056,100 ("the '100 patent"), require determination of data that "most closely match[es]" a customer profile. But what distinguishes a close match (non-infringing) from a most close match (infringing)? Is it based on a predetermined number (*e.g.*, top ten hits or top five percent of hits), or based on a weighted calculation (*e.g.*, only objects that share 90% of the sought characteristics)? And, as to any of these possibilities, what are the limits of the claimed monopoly? That is, if a party omits the top five hits or top two percent, do they infringe? The

answers are left to the subjective whim of Pinpoint and Pinpoint seeks to cash in on this ambiguity. Because the patents fail to provide any objective standard for determining the metes and bounds of the claims, the claims are invalid as indefinite under 35 U.S.C. § 112 ¶ 2.

The asserted claim of the third patent-in-suit, U.S. Patent No. 5,754,938 (“the ‘938 patent”) is similarly defective. The claim requires the routing of data “retrieved in said step of enabling access.” This retrieval step is a key aspect of the invention because the primary purpose of the claim is a method for retrieving relevant data from a larger data pool. But neither the claim nor the patent discusses how or what data is retrieved. The step of enabling access referred to in the limitation *does not even mention* data retrieval, let alone retrieval of relevant data. Thus, like “most closely match,” this limitation is indefinite because it fails to disclose the scope of retrieval that constitutes infringement or non-infringement.

Second, the patent claims must be limited to the specific mathematical constructs envisioned and disclosed to the U.S. Patent and Trademark Office (“USPTO”) as the invention.¹ To allow otherwise, would be to so broaden the patent as to encompass the prior art and obliterate entirely the distinction between the plethora of art in this extremely crowded field. Unlike indefiniteness, whether the patent terms are limited to mathematical constructs is not an issue of first impression. This Court previously held in a related case that the patents-in-suit relate to “mathematically comparing mathematically expressed customer preferences with mathematically expressed program contents.” Accordingly, Hotwire respectfully requests that the terms “customer profile,” “content profile,” and “relating...at least one customer profile with

¹ This issue is moot if the Court finds the claims to be invalid for indefiniteness.

the content profile..." in the '600 and '100 patents, and "target profile interest summary" in the '938 patent, if construed, be construed consistent with this Court's prior ruling.

FACTUAL BACKGROUND

The Parties

Defendant Hotwire, Inc. operates Hotwire.com, a discount travel website. Established in 2000 with just four employees, Hotwire offers users unsold hotel rooms, airline seats, or rental cars at a discounted rate. Hotwire does not identify the participating companies until after a purchase is made, a model known as "opaque." By doing so, Hotwire is able to offer significant discounts without directly competing with its travel partners. Hotwire has worked hard over the years to provide the best user experience possible and its efforts were recognized in 2006 when J.D. Power and Associates recognized Hotwire for ranking "Highest in Customer Satisfaction for Independent Travel Web Sites." Hotwire is headquartered in San Francisco, California, and today employs over 200 people.

Plaintiff Pinpoint Incorporated was also established in 2000. Unlike Hotwire, however, Pinpoint does not make or sell any products or services. Rather, Pinpoint is a "non-practicing entity." Its sole business is suing companies for patent infringement in an effort to obtain licensing revenue. Pinpoint has a single officer and no employees.

The Asserted Patents & Technology Background

The patents asserted against Hotwire by Pinpoint stem from a series of patents obtained by Frederick Herz, an opportunistic businessman and founder of Pinpoint. In the 1994 timeframe, Herz believed there was an opportunity in recommending television programming

based on the ongoing growth of the cable television industry. *See* Ex. A, 3/4/04 Herz dep. at 43.² But Herz lacked the mathematical and scientific background needed to create the requisite algorithms for categorizing programs and user preferences and ultimately making recommendations. He thus hired a “dream team” of engineers from the University of Pennsylvania to devise the necessary mathematical constructs for calculating and identifying matches between user preferences and program characteristics.³ *See id.* at 59 (“the algorithmic techniques were necessary for the processing and allocation of priority or prioritization.”). Herz filed some twenty or so patent applications based on the work done by this dream team.

The first such patent application was filed November 29, 1994, and resulted in U.S. Patent No. 5,758,257 (“the ‘257 patent”) on May 26, 1998. The three patents-in-suit, the ‘938 patent, the ‘600 patent, and the ‘100 patent, are descendants of the ‘257 patent.⁴ The parent ‘257 patent discloses more than 40 equations for use in a recommendation system. As the parent patent, the teachings of the ‘257 are incorporated into the patents-in-suit. The ‘600 patent and the ‘100 patent, in fact, have the same specification as the ‘257 patent. The ‘600 patent claims cover recommending “data objects” and the ‘100 patent claims cover recommending “textual

² To reduce the volume of attachments, only those deposition pages cited and needed for context are provided as exhibits. To the extent the Court would like Hotwire to present any or all deposition transcripts in their entirety, Hotwire will do so promptly upon this Court’s request.

³ Herz’s “dream team” consisted of Dr. Jian Zhang (computer science and statistics), Dr. Lyle Ungar (computer science and statistics), Dr. David Wachob (computer science), Dr. Marcos Salganicoff (computer science) and Dr. Jason Eisner (computer science).

⁴ The ‘600 and ‘100 patents are continuations of application No. 09/437,102 (now abandoned), which is a division of application No. 09/028,024 (now U.S. Patent No. 6,020,883), which is a division of the ‘257 patent. The ‘938 is a continuation-in-part application of the ‘257 patent. Exhibit B is a family tree of the Pinpoint patents discussed herein and Exhibit F is a copy of the patents-in-suit.

information items.” The ‘938 patent claims relate to recommending “target objects,” and further provide a mechanism for maintaining user anonymity through the use of a third-party proxy server.

The patents-in-suit are by no means ground-breaking. As one patent examiner aptly stated during prosecution of a prior art patent, “[i]t would have been obvious to a person having ordinary skill in the art at the time the invention was made to rank the degree of a user’s interest in an item” and “to indicate the degree of content of an item profile.” (Ex. C, U.S. Patent No. 7,242,988 (Hoffberg) File History, Office Action of 3/26/02 at 9).⁵ It is thus the specific algorithm that differentiates one method from another. Many such algorithms existed before the patents-in-suit. *See, e.g.*, Ex. D, U.S. Patent No. 7,242,988 (Hoffberg) (1991) (a preference matrix recommendation algorithm to calculate suitable programs for users); *see also* Ex. D, U.S. Patent No. 5,798,785 (Hendricks) (1998) (recommendation algorithm to suggest groups of TV programs to viewers). But the rapid pace of technology and the immense complexity and unpredictability of the human mental process render the possibilities for recommendation systems endless. *See* Ex. D, Lev Grossman, *If You Liked This...*, TIME, June 7, 2010, at 44. (“The trouble with recommendation engines is that they’re really hard to build. They look simple on the outside — if you liked X, you’ll love Y! — but they’re actually doing something fiendishly complex. They’re processing astounding quantities of data and doing so with seriously high-level math.”). Accordingly, many more algorithms for recommendations systems have been devised and patented after the patents-in-suit. *See, e.g.*, Ex. D, U.S. Patent No. 7,716,704 (Wang) (2010) (weighting algorithm for recommending TV programs to a user); U.S.

⁵ The Hoffberg patent was prior art of record considered during prosecution of the ‘600 patent.

Patent No. 7,542,951 (Chakrabarti) (2009) (algorithms for generating recommendations of items to a user). The perfect recommendation system does not and may never exist, but companies continue to invest millions of dollars in the effort to devise better algorithms. *See* Ex. D, Lev Grossman, *If You Liked This...*, TIME, June 7, 2010, at 44-48. Despite Pinpoint's claim in this litigation, no single entity or patent can be credited with a monopoly on recommendation systems generally.

Pinpoint's Litigation History

In 2003, Pinpoint sued Amazon.com under the '257 patent and U.S. Patent No. 5,754,939 ("the '939 patent"), another related patent.⁶ *See Pinpoint Inc. v. Amazon.com*, No. 03 C 4954, 2004 WL 5681471 (N.D. Ill. 2004). That case was assigned to Honorable Suzanne B. Conlon. On September 1, 2004, Judge Conlon construed the disputed terms of the asserted claims. *See id.* Pinpoint, however, did not have proper standing to bring its suit and the Honorable Richard A. Posner, sitting by designation, dismissed the litigation.⁷ *See Pinpoint Inc. v. Amazon.com*, 347 F. Supp. 2d 579, 586 (N.D. Ill. 2004). Pinpoint purportedly corrected the standing issue, refiled its case and sought reinstatement of Judge Conlon's claim construction. *Pinpoint Inc.*,

⁶ Exhibit E attached includes U.S. Patent No. 5,758,257 and U.S. Patent No. 5,754,939, the patents litigated in *Pinpoint Inc. v. Amazon.com*, No. 03 C 4954, 2004 WL 5681471 (N.D. Ill. 2004).

⁷ Amazon.com contended that the asserted patents were owned by the University of Pennsylvania based on a "Sponsored Research Agreement" between the inventors and the University. *Pinpoint Inc. v. Amazon.com*, 347 F. Supp. 2d at 581-82. Pinpoint disagreed and presented the testimony of Herz and Ungar in response. *Id.* at 581-82. Judge Posner found Herz's testimony "evasive," "unresponsive," and "implausible." *Id.* at 583. He further found Ungar to be a "a disloyal employee, whose disloyal act could not bind the University in its dealings with the sponsor whom Ungar was assisting in what amounted to a misappropriation of the University's intellectual property." *Id.* The Court thus concluded that the research done by Herz's team and the patented inventions were the intellectual property of the University of Pennsylvania. *Id.*

369 F. Supp. 2d at 997-1003. Amazon.com then asked the Court to consider, among other things, whether “customer profile” and “content profile” required mathematical constructs. *Id.* Judge Posner held that “customer profile” and “content profile” mean “mathematical constructs of customer preferences and program contents.”⁸ *Id.* at 1001. Judge Posner’s construction limited the patents-in-suit to the specific algorithms enumerated in the patents-in-suit. Shortly thereafter, Pinpoint dismissed its complaint against Amazon.com. Notably, neither Judge Conlon nor Judge Posner considered the issue of indefiniteness as presented by Hotwire herein.

Three days after Judge Posner’s decision, on May 20, 2005, Pinpoint filed two continuation applications. *See* Exs. B and F. As part of its submissions, Pinpoint included Judge Posner’s opinions. Nothing in the prosecution history of the applications indicates that the Examiner took a broader view of the terms construed by Judge Posner, or that the Examiner in any way disagreed with Judge Posner’s interpretations. The continuation applications resulted in the ‘600 and ‘100 patents.

The Current Litigation

On August 16, 2011, Pinpoint asserted infringement under the ‘938 patent and the ‘600 patent against Hotwire. Pinpoint later amended its complaint to add the ‘100 patent. Pinpoint concurrently has suits pending in this jurisdiction under the same patents against Groupon, Inc., Orbitz, LLC, Sears Roebuck and Co., and Staples, Inc. In this case, Pinpoint alleges that certain Hotwire emails offering deals to customers infringe the patents-in-suit. On February 29, 2012, the Court held a preliminary claim construction hearing during which Hotwire explained, among

⁸ Judge Posner considered two separate issues. *First*, whether the term “scheduling” as used in the claims implied a temporal component. *Second*, whether “customer profile” and “content profile” were limited to mathematical constructs. Only the second issue is relevant to this suit.

other things, that the asserted claims are invalid as indefinite and that, as previously held by this Court, they further must be limited to the mathematical constructs disclosed in the patents.

ARGUMENT

I. THE PATENTS-IN-SUIT ARE AMBIGUOUS AND NOT AMENABLE TO CONSTRUCTION, AND THEREFORE INVALID AS INDEFINITE

A. “most closely match” In The ‘600 And ‘100 Patents Is Indefinite Because It Is Subjective And Fails To Define The Scope Of The Claims With Specificity

It is a bedrock principal of patent law that a patent claim must “clearly distinguish what is claimed from what went before in the art and clearly circumscribe what is foreclosed from future enterprise.” *United Carbon Co. v. Binney & Smith Co.*, 317 U.S. 228, 236 (1942); 35 U.S.C. § 112 ¶ 2. A patent claim that fails to adequately and specifically do so is invalid. *See Damatize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1356 (Fed. Cir. 2005). Claim 29 of the ‘600 patent and claim 36 of the ‘100 patent fail to meet this foundational statutory requirement. These claims require “determining a subset of said data objects having content profiles which are determined, in said relating step, **to most closely match** said at least one customer profile.” (‘600 patent, col. 54, lns. 61-64) (emphasis added).⁹ But what constitutes the most closely matched subset? Is it the top ten objects, the top 20%, or perhaps the top 100? The patents provide no objective standard for this limitation so the basis for making recommendations – the cornerstone of the claimed invention – is wholly subjective and ambiguous. One of skill in the art is left entirely in the dark as to the scope of these claims. Consequently, claim 29 of the ‘600 patent

⁹ The ‘100 patent’s claim language contains the same flaw: “finding a subset of said textual information items having content profiles that most closely match said customer profile.” (‘100 patent, col. 54, lns. 12-14). Because the ‘600 and ‘100 patents share the same specification, citations are to the ‘600 patent unless otherwise specified. Exhibit H attached is a table cross-referencing the ‘600 patent specification citations with the ‘100 patent specification.

and claim 36 of the '100 patent (and any other claims employing similar language) are indefinite and therefore invalid.

A patent claim must “particularly point[] out and distinctly claim[] the subject matter which the applicant regards as his invention.” 35 U.S.C. § 112 ¶ 2. This requirement is crucial as it sets forth the precise “metes and bounds” of the patent, providing notice for the rest of the world as to the scope of the patentee’s right to exclude. *IPXL Holdings, LLC v. Amazon.com, Inc.*, 430 F.3d 1377, 1384 (Fed. Cir. 2005). A patent claim is indefinite if it is established by clear and convincing evidence that the claim fails to meet the requirements of 35 U.S.C. § 112 ¶ 2. *Damatize*, 417 F.3d at 1348. “A determination of claim indefiniteness is a legal conclusion that is drawn from the court’s performance of its duty as the construer of patent claims.” *Personalized Media Commc’n, LLC v. Int’l Trade Comm’n*, 161 F.3d 696, 705 (Fed. Cir. 1998). Claims that are “not amenable to construction,” or are “insolubly ambiguous,” are indefinite because they do not adequately convey the boundaries of the claimed monopoly. *See, e.g., Damatize*, 417 F.3d at 1347.

A tell-tale sign of indefiniteness is a limitation that is “completely dependent on a person’s subjective opinion.” *Damatize*, 417 F.3d at 1350. “Some objective standard must be provided in order to allow the public to determine the scope of the claimed invention.” *Id.* at 1350. On this score, claim limitations that employ a word or phrase of degree often raise an issue of indefiniteness because such terms require purely subjective interpretation. In fact, if a word of degree is used in a claim, “the district court must determine whether the patent’s specification provides some standard for measuring that degree,” that is “whether one of ordinary skill in the art would understand what is claimed when the claim is read in light of the specification.” *Seattle Box Co., Inc. v. Indus. Crating & Packing, Inc.*, 731 F.2d 818, 826 (Fed.

Cir. 1984); *see also Lucas Aerospace Ltd. V. Unison Indus., L.P.*, 899 F. Supp. 1268, 1273-74 (D. Del. 1995) (“when the patentee uses relative language in the patent claims, the relative language must have a point of reference for comparison.”)

Because “most closely match” connotes degree, this Court must determine whether the patents provide an objective basis for assessing what falls within “most closely match,” and what falls outside its scope. The patents-in-suit do not. This is particularly problematic because to find a subset of data that “most closely match[es]” is the entire purpose of the invention. *See, e.g.*, (‘600 patent, col. 1, lns. 64-67) (“The present invention is thus designed to help the customer of video and other data services to receive, with minimal effort, the information he or she is most interested in); (‘600 patent, col. 4, lns. 43-46) (“The virtual channels are determined by selecting from the available alternatives only those video programs or other data which most closely match the customer’s objective preferences.”). Neither the specification nor the claims provide a definitive standard or otherwise ascertainable metric for what constitutes “most closely matched.” To the contrary, “most closely match” has countless possible meanings. It might mean a certain number or percentage of the top ranked of a given population such as the top ten matches or 25% of matches. Alternatively, it could mean only those matches that meet a certain threshold of compatibility. For example, only those of a population that have a certain ranking or higher, such that a given population may have no hits, some hits or all hits. There simply is no way to tell. If a competitor seeks to avoid these claims, which results can it omit to safely be outside the bounds of “most closely match?”

The preferred embodiment illustrates the subjective and boundless nature of these claims. The patents use the example of “John” and “Mary” and their relative preferences in movies from a pool of six. (‘600 patent, col. 21-22); *see also* Ex. I. According to the preferred embodiment,

for the six movies identified, the taught algorithms would rank them in the following order of preference for John: *Terminator 2*, *Star Trek*, *Aliens*, *Fatal Attraction*, *Forever Young* and *Damnation Alley*. But which subset of these picks “most closely match” John’s profile? Is it the top two of this pool, a certain percentage or is it based on rank or weighted average? Each presents a different result, yet the patents provide no guidance as to which is correct. The result is sheer confusion. If a competing system were to offer the top three instead of the top two, would this infringe? What if a competing system were to recommend only *Aliens*, and omit the top two ranked movies, would it infringe? Or what if a system required a match of .500 or more so that none would be recommended here, but a new movie may if added? What about the reverse, if in the pool of six, all movies were romance films such that John really did not prefer any, would the top two of the romances still constitute “most closely matched?” This confusion and uncertainty is exacerbated exponentially as the pool is increased to thousands or even millions of data points.

The bottom line is that the only way to figure out the claimed scope and meaning of “most closely match” is to guess. Where such a key aspect of a claim is indiscernible and subject to varying multiple interpretations, it must be found to be indefinite. *See, e.g., Long Mfg. Co. v. Lilliston Implement Co.*, 328 F. Supp. 268, 275-77 (E.D.N.C. 1971) (“Courts have often looked with disfavor on terms ‘relatively,’ especially where, as here, it is used to describe what the plaintiff contends are key parts to the patents.”); *Arcade Inc. v. Minn. Mining & Mfg. Co.*, 24 USPQ 2d 1578, 1587 (E.D. Tenn. 1991) *aff’d*, 1 F.3d 1253 (Fed. Cir. 1993) (“Because [n]owhere does the ... patent specify what tests are to be run” and “[t]here are various speeds at which tests may be run which could make a difference in test results,” the accused infringer “had to find out how to run the tests by phoning” the patent owner.).

The case law is replete with examples of similarly ambiguous language ultimately resulting in invalidity of a patent claim. *See, e.g., Damatize*, 417 F.3d at 1350 (holding the term “aesthetically pleasing” indefinite as it is “completely dependent on a person’s subjective opinion”); *Norton Co. v. Bendix Corp.*, 449 F.2d 553, 555-57 (2d Cir. 1997) (holding the term “closely spaced” indefinite); *Amgen, Inc. v. Chugai Pharm. Co.*, 927 F.2d 1200, 1217-18 (Fed. Cir. 1991) (holding the term “at least about 160,000 IU/AU” indefinite). The phrases “relatively small number” and “large number” are similar to, if not more specific than, “most closely match.” These phrases were found to be indefinite because they provide no “anchor, such as a numeric threshold or a limited time and space” that would allow one of skill in the art to ascertain the scope of the claim. *Storm Products, Inc. v. Ebonite Int’l, Inc.*, 638 F. Supp. 2d 1307, 1313-14 (D. Utah 2009). Similarly, “less than about 2%,” another phrase that is more specific than “most closely match,” was also found to be indefinite because it “does not sufficiently inform a potential competitor about what would infringe.” *Synthes v. Smith & Nephew, Inc.*, 547 F. Supp. 2d 436, 454 (E.D. Pa. 2008). The term “reduced air content cleaning fabric” was found to be indefinite because the patent failed to provide “a reference baseline” based upon what a person of ordinary skill in the art can “determine by how much, if any, the air content has been reduced.” *Baldwin Graphic Sys., Inc. v. Siebert, Inc.*, No. 03 C 7713, 2008 WL 4083145, *8 (N.D. Ill. Aug. 27, 2008). So too was “substantially maximize” held indefinite because it provides no “objective standard for defining how close to the maximum one must be in order to infringe.” *KLA-Tencor Corp. v. Xitronix Corp.*, No. A-08-CA-723-SS, 2011 WL 318123, *4 (W.D. Tex. Jan. 31, 2011). These are just some of the many cases where language similar to that of the patents-in-suit was found to be indefinite. Attached as Exhibit J is a table of

cases and the specific phrases that were held indefinite. “[M]ost closely match” as used in claim 29 of the ‘600 patent and claim 36 of the ‘100 patent is even more problematic.

B. “retrieved in said step of enabling access” In The ‘938 Patent Also Is Indefinite.

A claim term also is indefinite when it lacks an antecedent basis such that its meaning is not reasonably ascertainable by those skilled in the art in light of the specification. *Energizer Holdings*, 435 F.3d 1366, 1370-71 (Fed. Cir. 2006). Claim 1 of the ‘938 limitation requires “confidentially routing target objects ..., *retrieved in said step of enabling access*, to said user.” (‘938 patent, col. 79, lns. 17-19) (emphasis added). This term is indefinite because it lacks an antecedent basis such that its meaning is not reasonably ascertainable. Claim 1 requires, in part:

...*enabling access* by said user to said plurality of target objects and sets of target object characteristics stored on said electronic storage media via said user target profile interest summary associated with said user’s pseudonym; and confidentially routing target objects and sets of target object characteristics, *retrieved in said step of enabling access*, to said user.

Id. (emphases added). The last step requires the routing of target objects that previously were “retrieved in the step of enabling access.” However, the prior enabling access step *does not* disclose the retrieval of any target objects. In addition to lacking antecedent basis, like “most closely match” above, the patent as a whole does not teach which target objects are to be retrieved and which are not. Thus, not only does the claim fail to provide an antecedent basis to the retrieval step, it also fails to disclose the scope of retrieval to allow one of skill in the art to understand what the claim covers and therefore avoid infringement. For these reasons, claim 1 of the ‘938 patent also is invalid under 35 U.S.C. § 112 ¶ 2.

“The requirement of antecedent basis is a rule of patent drafting, administered during patent examination.” *Energizer Holdings*, 435 F.3d at 1370. Failure to provide explicit antecedent basis does not render a claim indefinite if the meaning “would reasonably be

understood by persons of ordinary skill when read in light of the specification” or when “an antecedent basis can be present by implication.” *Id.* at 1370-71. But when, as here, a patent as a whole fails to fill the missing part with a meaning that can be ascertained by those skilled in the art, then the claim is indefinite. *See, e.g., Messerschmidt v. United States*, 29 Fed. Cl. 1, 42-43 (1993) (holding that “said first and second levers” lacked antecedent basis and was indefinite because the specification provided no clear guidance as to which levers were “said first and second levers”); *Uniram Tech., Inc. v. Monolithic System Tech., Inc.*, 2006 WL 825460, *12 (N.D. Cal. Mar. 30, 2006) (holding “said capacitor trench” to be indefinite because it lacked antecedent basis and because “capacitor trench” was not used in the claims or explained in the specification).

The retrieval of target objects in Claim 1 is not an arbitrary step, but rather a central component of the claimed invention. The ‘938 patent describes the invention as a method for selecting objects “of relevance and interest to the user without requiring the user to expend an excessive amount of time and energy.” (‘938 patent, col. 4, lns. 27-32). The retrieval step serves the specific purpose of identifying relevant or interesting objects for a user. (‘938 patent, col. 5, lns. 5-19). This in fact is discussed in the patent as a failing of the prior art. The specification explains that the ‘938 patent is distinct and patentable because it teaches selection of information that is **only relevant** to the user. (*See, e.g.*, ‘938 patent, col. 1, ln. 65-col. 2, ln. 13 & col. 4, lns. 4-43). This differentiation from the prior art is instrumental in assessing indefiniteness because it provides context to the retrieval step. *See Halliburton Energy Services, Inc. v. M-I LLC*, 514 F.3d 1244, 1252 (Fed. Cir. 2008) (differentiation of prior art “is an important consideration in the definiteness inquiry”).

Consistent with this differentiation over prior art, claim 1 covers “a method for automatically providing a user with ... access to *selected* ones of a plurality of target objects.” (‘938 patent, col. 78, lns. 63-65) (emphasis added). “[C]onfidentially routing target objects ..., retrieved in said step of enabling access, to said user” indicates that the selected target objects have been retrieved. But the prior enabling step provides no explanation, or antecedent basis, for the retrieval:

enabling access by said user to said plurality of target objects and sets of target object characteristics stored on said electronic storage media via said user target profile interest summary associated with said user’s pseudonym.

(‘938 patent, col. 79, lns. 17-19). What target objects of the plurality are to be retrieved in this step and how so? The enabling step in fact appears to be contrary to the purpose of the invention as it relates to the *entirety* of target objects, not a selected set. Nothing in the step of enabling access teaches one of skill in the art how to retrieve a subset of objects or which subset to retrieve, let alone a subset of “only relevant” objects as the patent claims to teach. Claim 1, therefore, is indefinite.¹⁰ See, e.g., *Illinois Computer Research LLC v. HarperCollins Publishers, Inc.*, No. 10 Civ. 9124, 2012 WL 163801, *10-11 (S.D.N.Y. Jan. 19, 2012); *Uniram Tech.*, 2006 WL 825460 at *12; *Messerschmidt*, 29 Fed. Cl. at 42-43.

The case of *Illinois Computer Research, LLC* is instructive. In that case, “said requests” was held indefinite because it lacked antecedent basis. *Illinois Computer Research*, 2012 WL 163801 at *11. Specifically, the specification did not provide “a sufficient basis for determining

¹⁰ This claim further is indefinite because it also fails to disclose from where the claimed method is retrieving data. For example, the specification discloses in one instance that the proxy server retrieves a user-requested file from an information server (‘938 patent, col. 42, lns. 23-26), while in another instance it discloses that the proxy server retrieves the target profile interest summary from its local storage. (‘938 patent, col. 34, lns. 27-36; col. 42, lns. 40-44).

what the requests are and who made them” *Id.* at *10. Likewise here, the patent fails to identify how the retrieval is to be performed and, more importantly, what is to be retrieved. The specification and the claims together thus fail to provide reasonably ascertainable meaning to “retrieved in said step of enabling access.”¹¹ Exhibit K reflects a table of numerous other cases where phrases lacking antecedent basis were found unclear and thus indefinite. As in those cases, “retrieved in said step of enabling access” as used in claim 1 presents an impermissible “zone of uncertainty” as to the meaning of the claim. *See United Carbon*, 317 U.S. at 236 (“A zone of uncertainty which enterprise and experimentation may enter only at the risk of infringing claims would discourage invention only a little less than unequivocal foreclosure of the field.”).

Even if the retrieval were adequately taught, does retrieving 10% of information available to the user infringe the claim? Does it have to be the top 10% of matches or any 10%? When, as here, a claim is so ambiguous that the same conduct may be “sometimes infringing and sometimes not,” the claim is indefinite. *Halliburton Energy Services*, 514 F.3d at 1255. To hold otherwise would “undermine the notice function of the claims” because it would allow Pinpoint to “benefit from the ambiguity,” rather than requiring Pinpoint to “give proper notice of the scope of the claims to competitors.” *Id.* at 1254.

II. THE ASSERTED CLAIMS ARE LIMITED TO THE DISCLOSED MATHEMATICAL CONSTRUCTS

Because the asserted independent claims are indefinite, this Court need not undertake the additional burden of claim construction. If, however, this Court somehow is able to give

¹¹ Pinpoint’s proposed construction, “routing protected from unwanted disclosure target objects and sets of target object characteristics, retrieved in said step of enabling access, to said user,” fails to provide any insight or reasonable meaning regarding the claimed retrieval.

meaning to the claim limitations identified above, Hotwire turns next to the issue of whether certain claim limitations should be limited to the mathematical constructs disclosed in the patents.¹² This dispute stems from Pinpoint's attempt to stretch the patent claims so broadly as to cover virtually any recommendation technology. Pinpoint's litigation position ignores Judge Posner's prior ruling and far exceeds the actual scope of the invention under any measure. In contrast, Hotwire moves for the broadest reasonable interpretation based on the intrinsic and extrinsic evidence – constructions consistent with this Court's prior constructions. The specific terms implicated are “customer profile,” “content profile,” and “relating... at least one customer profile with the content profile...” in the ‘600 and ‘100 patents, and “target profile interest summary” in the ‘938 patent.¹³ Hotwire begins its analysis with a recitation of the applicable law on claim construction, followed by the specific intrinsic and extrinsic evidence supporting its construction.

A. Claim Construction Is The Sole Province Of The Court

Claim construction is a matter of law reserved for the Court. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970-71 (Fed. Cir. 1995), *aff'd* 517 U.S. 370 (1996). The starting point is, of course, the claim itself as the language used “provide[s] substantial guidance as to the meaning of particular claim terms.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc). This meaning is then supplemented with further understanding provided by the specification and the prosecution history. *See Medrad, Inc. v. MRI Devices Corp.*, 401 F.3d

¹² The parties dispute the meaning of numerous other terms in the patents-in-suit; however, those disputes do not implicate the mathematical construct issue and therefore are not discussed in this brief. Hotwire reserves its rights as to the construction of any term not expressly addressed herein.

¹³ Exhibit L attached sets forth the parties' respective proposed constructions.

1313, 1319 (Fed. Cir. 2005) (“We cannot look at the ordinary meaning of the term in a vacuum. Rather, we must look at the ordinary meaning in the context of the written description and the prosecution history.”). In addition, a Court may also consider extrinsic evidence, although such evidence typically is given less weight than intrinsic evidence. *See Eon-Net LP v. Flagstar Bancorp.*, 653 F.3d 1314, 1320 (Fed. Cir. 2011).

“The specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.” *Phillips*, 415 F.3d at 1315. “[T]he descriptive part of the specification aids in ascertaining the scope and meaning of the claims inasmuch as the words of the claims must be based on the description.” *Id.*; *see also Schriber-Schroth Co. v. Cleveland Trust Co.*, 311 U.S. 211, 217 (1940) (“The claims of a patent are always to be read or interpreted in the light of its specifications.”). “Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim.” *Phillips*, 415 F.3d at 1316.

In addition to the specification, a court should also consider the patent’s prosecution history. *See, e.g., Phillips*, 415 F.3d at 1317 (designating the prosecution history part of the intrinsic evidence of a patent). “Like the specification, the prosecution history provides evidence of how the USPTO and the inventor understood the patent.” *Id.* “The purpose of consulting the prosecution history in construing a claim is to exclude any interpretation that was disclaimed during prosecution.” *Chimie v. PPG Indus.*, 402 F.3d 1371, 1384 (Fed. Cir. 2005). The patents-in-suit are all related and stem from the same parent patent. As such, “[a]ny statement of the patentee in the prosecution of a related application as to the scope of the invention would be relevant to claim construction,” particularly when “made in an official proceeding in which the

patentee had every incentive to exercise care in characterizing the scope of its invention.” *Microsoft Corp. v. Multi-Tech Systems, Inc.*, 357 F.3d 1340, 1350 (Fed. Cir. 2004) (statement made during prosecution of related patent operated as a disclaimer with respect to a later issued patent).

Beyond the claim language, specification and prosecution history (*i.e.*, intrinsic evidence), courts also can “rely on extrinsic evidence, which consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” *Phillips*, 415 F.3d at 1317. “However, while extrinsic evidence can shed useful light on the relevant art,...it is less significant than the intrinsic record in determining the legally operative meaning of claim language.” *Id.*

Judge Posner interpreted the same or similar terms in the prior *Amazon.com* litigation. Because Pinpoint participated in that litigation, it is now bound by those constructions. *See, e.g., Edberg v. CPI-The Alt. Supplier, Inc.*, 156 F. Supp. 2d 190, 195-96 (D. Conn. 2001) (preventing the patentee from asserting a claim construction that differed from a construction order in a prior case); *Smith & Nephew, Inc. v. Arthrex, Inc.*, No. CV 04-29-MO, 2007 WL 1114229, *4 (D. Or. April 12, 2007) (prior construction used against plaintiff); *but see also Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 391 (1996) (“issue preclusion could not be asserted against new and independent infringement defendants”); *Blonder-Tongue Labs., Inc. v. Univ. of Ill. Found.*, 402 U.S. 313, 329 (1971).

As explained below, the intrinsic evidence and extrinsic evidence overwhelmingly favor Hotwire’s proposed constructions. Moreover, this Court already has performed this analysis once before and Hotwire’s construction is consistent with the Court’s prior conclusion. There is no reason for this Court to change the constructions now.

B. “customer profile,” “content profile,” and “relating... at least one customer profile with the content profile...” In The ‘600 And ‘100 Patents Are Limited To The Disclosed Mathematical Constructs

1. *“customer profile” and “content profile”*

The parties’ respective constructions for these terms are similar, save for the dispute relating to the incorporation of the disclosed mathematical constructs. For “customer profile,” the parties’ propose:

- *Hotwire*: using one or more disclosed mathematical constructs to quantitatively represent certain characteristics of a customer.
- *Pinpoint*: a set of information related to a specific customer that describes characteristics of the customer.

And, for “content profile,” the parties’ propose:

- *Hotwire*: using a disclosed mathematical construct to quantitatively represent certain characteristics of a data object.
- *Pinpoint*: collections of data that describes characteristics about the items of interest.

Pinpoint’s proposals are problematic in two key respects. *First*, Pinpoint entirely ignores Judge Posner’s prior ruling without any basis. Judge Posner, based on the totality of the evidence, ruled that these terms require mathematical constructs. *Second*, Pinpoint departs entirely from the teachings of the specification and the actual invention disclosed. This is clearly overbroad as it engulfs virtually every recommendation system past, present and future. Hotwire’s constructions, on the other hand, are consistent with Judge Posner’s prior ruling and broad enough to cover all embodiments taught as well as any natural extensions thereof, without swallowing that which the inventors did not and could not have envisioned. Because this Court has once before performed this very analysis, Hotwire turns first to the Court’s prior analysis and then to the intrinsic and extrinsic evidence supporting Hotwire’s position.

As part of the *Amazon.com* litigation, Judge Posner construed “customer profile” and “content profile,” the very terms at issue here.¹⁴ *Pinpoint*, 369 F. Supp. 2d at 1001-1003. While the Court’s prior construction was for the ‘257 patent, the Court’s ruling applies equally here because the ‘257 is the parent of the ‘600 and ‘100 patents.¹⁵ *See, e.g., NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282, 1293 (Fed. Cir. 2005) (“Because NTP’s patents all derive from the same parent application and share many common terms, we must interpret the claims consistently across all asserted patents.”); *Boss Indus. v. Yamaha Motor Co.*, 333 Fed. App’x 531, 536-37 (Fed. Cir. 2009) (construing related patent claims consistently because they share similar disclosures).

In forming the Court’s opinion, Judge Posner considered the ‘257 patent, the prosecution history, the parties’ litigation positions and related patents. *Pinpoint*, 369 F. Supp. 2d at 998-1002. Based on this review, he observed that neither “customer profile” nor “content profile” is defined explicitly in the specification. *Id.* at 1001. Judge Posner further found that “[n]o nonquantitative characterization, definition, or expression of such preferences and contents is described.” *Id.* He ultimately held that the patent covers “**mathematically** comparing **mathematically** expressed customer preferences with **mathematically** expressed program contents.” *Id.* at 1003 (emphases added). Judge Posner thus specifically construed “customer profile” and “content profile” to mean “**mathematical** constructs of customer preferences and

¹⁴ As explained above, the Court was not asked in *Amazon.com* to consider whether the limitations discussed in Section I above were indefinite. That is a question of first impression before this Court.

¹⁵ For the Court’s convenience, attached as Exhibit M, is a comparison of the claim language at issue in the *Amazon.com* litigation and the claims involved in this case.

program contents.” *Id.* at 1001 (emphasis in original). Hotwire’s construction is the only one that accounts for this Court’s prior ruling.

The intrinsic evidence fully supports Hotwire’s position. The starting point is the plain language of the claims. The claims make clear that the customer profile indicates “the customer’s preferences for data.” (‘600 patent, col. 54, lns. 52-53). Similarly, the content profile indicates “the presence or degree of content of said predetermined characteristics.” (‘600 patent, col. 54, lns. 55-57). These profiles are then “related” to one another “using a microprocessor.” (‘600 patent, col. 54, lns. 58-60). The plain language requirement that the customer and content profiles be compared using a microprocessor is essential to claim construction because it tells those skilled in the art that the profiles must be readable by computers, *i.e.*, mathematical constructs. *See Pause Tech, LLC v. TiVo*, 419 F.3d 1326, 1331 (Fed. Cir. 2005) (“proper claim construction ... demands interpretation of the entire claim in context, not a single element in isolation.”); *Phillips*, 415 F.3d at 1314 (“the context in which a term is used in the asserted claim can be highly instructive.”); *ACTV, Inc. v. Walt Disney Co.*, 346 F.3d 1082, 1088-90 (Fed. Cir. 2003) (“While certain terms may be at the center of the claim construction debate, the context of the surrounding words of the claim also must be considered”).

The specification’s teachings are consistent with the plain language of the claims. The invention is described as “a customer profile system in which the characteristics of a data source are **quantified** in some objective manner and stored as content profiles and the customer’s preferences for those characteristics are stored in the form of one or more customer profiles.” (‘600 patent, col. 9, lns. 42-47) (emphasis added); *see also* (‘600 patent, col. 10, lns. 27-31) (“the present inventors will describe the mathematical basis for the content profiles and the customer profiles in this section and will describe the generation of the agreement matrix and the uses of

the agreement matrix in the next section.”). These statements made with respect to the invention as a whole, and not limited to any preferred embodiment, are telling of the intended scope of the invention. *See Honeywell Int’l v. ITT Indus.*, 452 F.3d 1312, 1318-19 (Fed. Cir. 2006) (description of the “present invention” as a whole limits the scope of the invention).

Similarly, in explaining the “Terminology” for the patent, the specification provides that “[t]he following subscription indices will be used throughout this specification:”

- “CV_i: the vector {cv_{ik}|k∈K} which forms customer i’s profile for all characteristics k” (‘600 patent, col. 10, lns. 46-47), and
- “CP_j: the vector {cp_{jk}|k∈K} which forms program j’s profile for all characteristics k.” (‘600 patent, col. 10, lns. 52-53).

Such calculations and mathematical analyses are used exclusively throughout the remainder of the patent. *See, e.g.*, (‘600 patent, col. 7, lns. 23-26) (“the customer profile, cv_{ik}, for customer i and video program characteristic k may be adjusted to a new customer profile, cv’_{ik}, in accordance with the equation”); (‘600 patent, col. 10, lns. 22-27) (“[t]he content profiles and the customer profiles are thus described as a collection of mathematical values”); (‘600 patent, col. 11, lns. 39-45) (“[a] profile, either of a customer (Customer Profile) or of a program (Content Profile), is composed of arrays of characteristics which define the customer profile vector CV_i and the program profile vector CP_j”). The specification discloses some 40 equations from column 12 through column 41. In contrast, there is no explanation of a customer profile or content profile that is not a mathematical construct.

The extrinsic evidence also supports Hotwire’s construction. As an initial matter, the number of inventors and their backgrounds speaks volumes. Herz needed a team of specialized engineers and scientists to develop the algorithms for the disclosed system. If, as Pinpoint now argues, the invention was not the specific algorithms but rather the general idea of characterizing

data and customers and matching them, why would Herz have spent thousands of dollars on a “dream team” of engineers? Pinpoint’s position defies common sense. The inventors themselves admit under oath that the inventive aspects are the mathematical constructs. For instance, Dr. Eisner described the goals of the project as “[t]he interesting technical problem is always – in statistics is to find a way of modeling the messy real world in terms of – by using statistical techniques.” See Ex. N, 2/27/04 Eisner dep. at 67. Dr. Ungar, who is named on the ‘600 & ‘100 patents, described the work as a “variety of potential algorithms for recommender systems and for selecting potential programs or movies that might be shown to viewers.” See Ex. O, 2/12/04 Ungar dep. at 78. Even Herz admitted that the algorithmic techniques “were necessary for the processing and allocation of priority or prioritization....” Ex. A, 3/4/04 Herz dep. at 58-59. All of this evidence is consistent with Hotwire’s position.

Despite the overwhelming evidence above, Pinpoint asks this Court to ignore the prior rulings and broaden these patents to cover *any* recommendation method, even those the inventors did not invent. Pinpoint’s premise ignores Judge Posner’s interpretation of the very terms in dispute based on identical specifications, and is inconsistent with the intrinsic evidence and extrinsic evidence. Accordingly, this Court should deny Pinpoint’s request to extend its monopoly to any algorithm for recommending objects to customers.

2. *“relating, using a microprocessor, said at least customer profile with the content profiles for the data available from each of said data objects”*

Hotwire proposes this limitation be construed to mean “using a disclosed mathematical construct to establish, using a microprocessor, a logical connection between a customer profile and a content profile based on the relative closeness of the customer profile with the content profile.” Hotwire’s construction is based on the intrinsic and extrinsic evidence, as well as this Court’s prior construction. Pinpoint proposes this term be construed as “establishing a logical

connection between the customer profile and content profiles for the available data.” Once again, Pinpoint’s construction is unfounded and improperly strays from this Court’s prior decision.

As part of the *Amazon.com* litigation, this Court twice considered claim construction of the relevant terms. That litigation began before Judge Conlon, who initially construed the disputed claim terms. *Pinpoint*, 2004 WL 5681471. Judge Conlon found the “relating” step at issue here to mean “establishing a logical connection between the customer profile and content profiles for the available data.”¹⁶ *Id.* at *14. Judge’s Conlon’s constructions, however, lacked the force of law because Pinpoint did not have standing under the patents. *Pinpoint*, 347 F. Supp. 2d at 579. Judge Posner later revisited the claim construction and found that the patent claims were limited to mathematical constructs. *Pinpoint*, 369 F. Supp. 2d at 1003. Judge Posner then “reinstat[ed] Judge Conlon’s claims construction as modified by [his] opinion.” *Id.* Hotwire’s construction reflects Judge Posner’s rulings.

The intrinsic evidence supports Hotwire’s construction. The “relating” step is the comparison of the customer profiles with the content profiles. As the claim language specifies, this step is performed using a “microprocessor.” A microprocessor, of course, operates based on data representations in code, *i.e.*, mathematical constructs. The plain language, particularly the requirement that the profiles be related using a microprocessor, leaves no doubt that this term must be a mathematical construct. *See Brown v. Baylor Healthcare System*, 381 Fed. Appx. 981,

¹⁶ Ironically, Pinpoint adopts this construction for this term, while ignoring the Court’s construction of “customer profile” and “content profile.” Pinpoint cannot cherry-pick this Court’s rulings for favorable terms. *See Edberg*, 156 F. Supp. 2d at 195-96 (preventing the patentee from asserting a claim construction that differed from a construction order in a prior case).

984 (Fed. Cir. 2010) (“For a microprocessor claimed by the function it performs, the disclosed structure must be a microprocessor programmed to carry out an algorithm. Accordingly, the corresponding structure for such a limitation is the algorithm itself.”).

This interpretation is consistent with the specification. The only discussion of the comparison step involves mathematical constructs. For example, the invention summary explains that “[a]n agreement matrix relating the customer profiles with the content profiles is [] generated.” (‘600 patent, col. 5, lns. 19-21). A matrix is a mathematical construct. The specification further explains “the content profiles describe the contents of video programs and are *compared mathematically* in a computer to customer profiles to generate an agreement matrix which establishes the degree of correlation between the preferences of the customer or customers and the video programming available during each video programming time slot.” (‘600 patent, col. 10, lns. 17-23) (emphasis added). There is in fact an entire section entitled “Calculation of Agreement Matrix” that provides, in part:

The calculated agreement scalars, *ac*, form an agreement matrix, *AC*, which provides measurements of the similarity between the customer profiles and the content profiles. Its calculation incorporates the desired amounts of the various characteristics used to define the programs, their importance (weights) to each customer, and the amounts of these characteristics present in each program as determined by experts or test groups.

(‘600 patent, col. 19, lns. 20-28). The specification then lists the algorithms and their calculations that relate the customer and content profiles, which in turn derive the quantified recommendations. *See* (‘600 patent, col. 19, lns. 33-47).

The most telling evidence that this step must be limited to the disclosed mathematical constructs is the sworn statement by the inventors provided during prosecution to overcome prior art. The Applicants characterized their invention, under oath, as:

We propose an *algorithm* for scheduling the broadcast of movies and other shows over a television network which allows the simultaneous distribution of many channels to many viewers, such as a cable system. *This algorithm* is based on an "agreement matrix" characterizing the attractiveness of each movie to each prospective viewer.

(Ex. G, '100 Patent File History, 9/2/10 Rule 131 Declaration at 32 (Bates No. Pinpoint 4801))¹⁷ (emphases added). As a matter of law, the patent must be limited accordingly. *See Microsoft Corp.*, 357 F.3d. at 1350 ("a patentee's statements during prosecution, whether relied on by the examiner or not, are relevant to claim interpretation"); *see also Pinpoint*, 369 F. Supp. 2d at 1001 ("An interpretation of a term in the specifications that encompasses the prior art that inspired the examiner's objection is forbidden"); *Ekchian v. Home Depot, Inc.*, 104 F.3d 1299, 1304 (Fed. Cir. 1997) ("[S]ince, by distinguishing the claimed invention over the prior art, an applicant is indicating what the claims do not cover, he is by implication surrendering such protection.").

The preferred embodiment underscores why Pinpoint's construction cannot be correct. According to the patent teachings, the taught algorithm results in the following order of preference for John from a pool of six movies: *Terminator 2*, *Star Trek*, *Aliens*, *Fatal Attraction*, *Forever Young* and *Damnation Alley*. *See* ('600 patent, col. 21-22); Ex. I. An algorithm that results in a different sequence, *e.g.*, *Aliens*, *Fatal Attraction*, *Terminator 2*, *Damnation Alley*, *Star Trek* and *Forever Young*, is not taught and thus **cannot** fall within the scope of the claims. *See, e.g., Phillips*, 415 F.3d at 1316; *Abbott Labs. v. Sandoz, Inc.*, 566 F.3d 1282, 1288 (Fed.Cir. 2009) ("[T]he claims cannot enlarge what is patented beyond what the inventor has described as

¹⁷ The prosecution histories are over 1000 pages long. In the interest of brevity, Hotwire attaches at Exhibit G the relevant portions specifically discussed in this brief only. Hotwire will provide electronic copies of the entire file histories for the patents-in-suit with the Court's courtesy copy of this brief. If the Court would like Hotwire to submit entire copies in hardcopy as well, Hotwire will provide them promptly upon this Court's request.

the invention.”). Yet, Pinpoint seeks a construction such that any order of preference – basically, any recommendation method – of this data for these six movies for John would infringe, not just the ones obtained using the algorithms taught. Such an overbroad construction is undeserved and flies in the face of the overwhelming evidence.

C. “target profile interest summary” In The ‘938 Patent Requires The Disclosed Mathematical Constructs

The debate as to this term is the same as those above. Hotwire proposes “target profile interest summary” mean “using a disclosed mathematical construct to quantitatively represent the target object characteristics that a user likes and/or dislikes.” Pinpoint, conversely, proposes a generic and overly broad definition of “a summary of digital profiles of target objects that a user likes and/or dislikes.” Hotwire’s construction is supported by the intrinsic evidence, the extrinsic evidence and the Court’s prior ruling.

The ‘938 patent also is a child of the ‘257 patent and likewise covers a recommendation system based on a user profile and target object profile; however, the ‘938 patent has a different specification than the ‘257 patent (and consequently the ‘600 and ‘100 patents).¹⁸ The ‘938 patent claims cover recommending “target objects,” rather than “data objects” (‘600 patent) or “textual information items” (‘100 patent). Because the ‘257 patent is a parent of the ‘938 patent, the teachings of the ‘257 patent are deemed to be incorporated into the ‘938 patent. *See Application of Lund*, 376 F.2d 982, 988 (C.C.P.A. 1967). Moreover, as part of the same family, the ‘938 patent claims must be construed consistently with the ‘257, ‘600 and ‘100 patents. *See*,

¹⁸ The real distinction with respect to the ‘938 patent is the added discussion and claim limitations relating to the use of a third-party authenticating entity and proxy to allow for anonymous use of the method. This distinction is not implicated in this term, but is a subject of the parties’ dispute as to other terms of the ‘938 patent.

e.g., *NTP, Inc.*, 418 F.3d at 1293; *Boss Indus. v. Yamaha*, 333 F. App'x at 536-37. And, because the '938 patent is part of the same family and derives from the '257 patent, this Court's prior ruling is binding on Pinpoint here as well.

This Court clearly held that the '257 patent, the parent of the '938 patent, is limited to “mathematically comparing mathematically expressed customer preferences with mathematically expressed program contents.” *Pinpoint*, 369 F. Supp. 2d at 1003. Although “target profile interest summary” differs semantically from the terms used in the '257 patent, it is equivalent to “customer profile” as it is the representation of the customer's preferences for characteristics of target objects. *See e.g.* ('938 patent, col. 1, lns. 25-26) (“target profile interest summary describes user's interest level in various types of target objects”); *compare with* '257 patent, Abstract (“Customer profiles...describing how important certain characteristics of the data are to each customer.”). As explained in Section II.A.1 above, Judge Posner made clear that “customer profile” requires a mathematical constructs, and thus so does “target profile interest summary.”

Hotwire's position is consistent with the intrinsic evidence. The claim requires that the target profile interest summary be “indicative of said user's access patterns.” ('938 patent, col. 79, ln. 8). This inherently requires the use of a mathematical construct. Furthermore, the recommendations once obtained are to be sent to users “connected via user terminals.” ('938 patent, col. 78, ln. 67). Because the profiles are used in conjunction with computer systems, they must be based on mathematical constructs.

Consistent with the plain language, the specification discloses various algorithms to derive “target profile interest summaries.” For example, the specification details how to quantify and calculate the likelihood of interest in a target object for a specific user. ('938 patent, col. 18, lns. 34-47 & col. 20, lns. 10-25). The patent then provides algorithms to calculate the

mathematical representations of the target objects. *See, e.g.*, ('938 patent, col. 21, lns. 8-9 & col. 23, lns. 28-29); *see also* ('938 patent, col. 18, ln. 34 - col. 19, ln. 27; col. 20, lns. 10-25; col. 21, lns. 11-17; col. 21, ln. 62 – col. 22, ln. 12). These disclosures are in addition to the over 40 equations disclosed in the parent '257 patent. Conversely, the '938 patent does not teach a “target profile interest summary” that is not a mathematical construct, and that can still meet the claim requirements of being “indicative of a user’s access patterns,” and accessed by users “connected via user terminals”.

The most compelling intrinsic evidence are the Applicants’ admissions during prosecution. While prosecuting another related patent, U.S. Patent No. 6,460,036 (“the ‘036 patent”),¹⁹ the Applicants’ claims were rejected based on U.S. Patent No. 5,740,549 to Reilly. In response, the Applicants argued:

[T]hese target profiles are automatically generated by a computer system running a selected file generation algorithm on the contents of such targets. In addition, a numerical correlation between the user target profiles and the target profiles is generated, and used to create the customized electronic newspaper.

(Ex. P, U.S. Patent No. 6,460,036 Patent File History, 10/5/01 Response to Office Action of 4/5/01, at 7-8 (Bates No. H6655-56)). The Applicants further stated that “Reilly does not provide for the generation of numerical correlations between the user profiles and target profiles.” *Id.* These statements leave no doubt that target profile interest summary is a mathematical construct generated by an algorithm. Pinpoint cannot expand the scope of this term after-the-fact. *See Microsoft Corp.*, 357 F.3d at 1350 (statement made during prosecution

¹⁹ The '036 patent is a child of the '257 patent. The '036 patent specification is identical in all material respects to the '938 patent specification. Exhibit B attached is a patent tree reflecting the relationship of the patents-in-suit.

of related patent operated as a disclaimer with respect to a family patent's claim scope); *Augustine Med., Inc. v. Gaymar Indus.*, 181 F.3d 1291, 1300 (Fed. Cir. 1999) (“[T]he prosecution history of a parent application may limit the scope of a later application using the same claim term.”).

The final affirmative evidence is the sworn inventor testimony. Dr. Eisner defined “target profile” as “an electronic representation of or [*sic*] a mathematical representation of some pertinent data about an object of potential interest.” See Ex. N, 2/28/04 Eisner dep. at 213-14. This is consistent with the totality of the intrinsic evidence.

To avoid binding precedent, the patent teachings and the prosecution history disclaimers, Pinpoint attempts to latch on to a definition of “target profile interest summary” provided in the specification. Pinpoint misses the mark. The specification states that this limitation is a “summary of digital profiles of target objects,” (‘938 patent, col. 4, lns. 55-57), but does not explain what constitutes such a summary. Rather, the specification states that the “target profile interest summary describes the user’s interest level in various types of target objects.” (‘938 patent, col. 1, lns. 25-26). The specification further states “the user’s interest in a target object is defined to be a **numerical** measurement of the user’s relative desire to locate that object rather than others.” (‘938 patent, col. 9, lns. 56-58) (emphasis added). Thus, the definition provided in the specification requires a mathematical construct. Only Hotwire’s construction accounts for these explicit teachings.

Pinpoint’s construction further cannot be correct because it improperly tries to recapture what was surrendered during prosecution. See *Seachange Intern., Inc. v. C-Cor, Inc.*, 413 F.3d 1361, 1372-73 (Fed. Cir. 2005) (“Where an applicant argues that a claim possesses a feature that the prior art does not possess in order to overcome a prior art rejection, the argument may serve

to narrow the scope of otherwise broad claim language.”). Pinpoint did not invent and cannot now claim as its monopoly all systems that match consumers with products. As Judge Posner recognized, “so simple a matching system, as we know, would be obvious on the basis of the prior art, such as the Strubbe patent.” *Pinpoint*, 369 F. Supp. 2d at 1002. Nothing has changed. Pinpoint therefore should be limited to the purported invention of the patents-in-suit: the algorithms disclosed for formulating customer and content profiles and relating the two. Anything else is undeserved, would burden business everywhere, and would chill innovation in the field of recommendation systems.

CONCLUSION

For the reasons set forth above, Hotwire respectfully requests that this Court find the asserted claims invalid as indefinite. In addition, should this Court construe those terms addressed herein, Hotwire respectfully requests that this Court adopt Hotwire’s proposed constructions as set forth in Exhibit L for: (1) “customer profile” as used in the ‘600 and ‘100 patents; (2) “content profile” as used in the ‘600 and ‘100 patents; (3) “relating, using a microprocessor, said at least customer profile with the content profiles for the data available from each of said data objects” as used in the ‘600 patent; and (4) “target profile interest summary” as used in the ‘938 patent.

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned, a non-attorney, certifies that on April 30, 2012 Hotwire, Inc.'s Opening Brief Regarding Indefiniteness and Mathematical Construct Claim Limitations was filed electronically with the clerk pursuant to the Court's CM/ECF procedures. All parties in this case are represented by an E-Filer and have consented to service by electronic means under Fed. R. Civ. P. 5(b)(2)(D).

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